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BEFORE THE POSTAL REGULATORY COMMISSION
WASHINGTON, D.C. 20268-0001

Statutory Review of the System for Regulating Rates and Classes for Market Dominant Products	Docket No. RM2017-3

STATEMENT OF JOHN C. PANZAR
ON BEHALF OF PITNEY BOWES INC.
(March 20, 2017)

I. INTRODUCTION

My name is John C. Panzar. I am Professor of Economics in the Business School of the University of Auckland and Louis W. Menk Professor, Emeritus, at Northwestern University. My professional work has included analysis of economic pricing and costing principles for the United States Postal Service and other multiproduct firms. Since 1984, I have sponsored testimony to the Postal Regulatory Commission ("PRC" or "the Commission") and its predecessor, the Postal Rate Commission, for several parties, including the Commission itself. A copy of my CV is attached as an Appendix to this statement.

The purpose of this statement is to recommend that the Commission require that workshare discounts be equal to 100 percent of avoided costs in order to advance the objectives of the Postal Accountability and Enhancement Act of 2006 ("PAEA"). This policy, known in the regulatory economics literature as the Efficient Component Pricing

("ECP") rule, has a long history of successful application in the postal sector. Requiring it as a formal part of the regulations implementing PAEA would maximize incentives to reduce costs and increase efficiency in the postal sector.[1] It would also promote just and reasonable rates by preventing exclusionary anticompetitive behavior.[2]

The PRC should ignore the criticism that the use of ECP would restrict the pricing flexibility of the Postal Service. Under PAEA, pricing flexibility is not end in itself. Rather, it is important as a means to encourage increased mail volume and operational efficiency.[3] ECP will not meaningfully limit the Postal Service's use of pricing flexibility for these purposes. By definition, ECP maximizes the operational efficiency of the postal sector and its application is unlikely to have an adverse effect on mail volumes.

The remainder of this statement is organized as follows.[4] Section II provides a brief review of the history of worksharing discounts and the development of ECP in the U.S. Postal Sector. It reviews the origin of avoided cost discounts under the Postal Reform Act ("PRA) and explains why ECP is required to achieve productive efficiency

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[1] *See* 39 U.S.C. 3622(b)(1); 39 U.S.C. 3622(c)(12).
[2] *See* 39 U.S.C. 3622(b)(8).
[3] *See* 39 U.S.C. 3622(b)(4); 39 U.S.C. 3622(c)(7).
[4] Because of its policy importance, the issue of worksharing discounts is a long-standing interest of mine. It has been the subject of previous testimony in RM2007-1 [Panzar (2007)] and ACR2012 [Panzar (2012)]. ECP has also been the subject of a number of my academic papers: e.g., [Panzar (1993)] "Competition, Efficiency, and the Vertical Structure of Postal Services," in M. Crew and P. Kleindorfer, eds., *Regulation and the Evolving Nature of Postal and Delivery Services: 1992 and Beyond,* Kluwer; [Panzar (2006)] "Efficient Work-sharing Discounts with Mail Heterogeneity," In: Crew and Kleindorfer (ed.) *Liberalization of the Postal and Delivery Sector*, pp. 121-134. Edward Elger; [Panzar (2008)] "Interactions between Regulatory and Antitrust Policy in a Liberalized Postal Sector," In: Crew, Kleindorfer and Campbell (ed.) *Handbook of Worldwide Postal Reform,* Edward Elgar; [Panzar (2010)] "Postal Service Pricing Policies after PAEA," USPS OIG RARC-WP-10-002; and [Panzar (2011)] "Postal Service Pricing Policies after the Transition to Price Cap Regulation," *Review of Network Economics,* Vol. 10, Issue 3. Thus, I have made the arguments presented here on numerous prior occasions. The reader will please forgive me if I seem to have "recycled" my previous work.

in the postal sector. The section concludes with a discussion of the Commission's unfortunate decision to abandon ECP under PAEA. Section III shows that ECP is not likely to interfere with other statutory objectives under PAEA. Section IV explains why the PRC should allow only limited exceptions to an ECP floor on discounts. Section V summarizes this entire discussion.

II. REVIEW: ECP IN THE POSTAL SECTOR

Worksharing was the crowning achievement of postal policy under the Postal Reform Act of 1970 (PRA). Its use succeeded in "liberalizing" a large share of postal sector value added and created a highly innovative competitive industry. The result was enhanced economic efficiency for both the postal sector and the Postal Service.[5] The guiding policy principle of the Postal Rate Commission (PRC) toward worksharing was the Efficient Component Pricing (ECP) rule.[6] Worksharing discounts were set equal to the (unit) avoided costs of the Postal Service. ECP decentralizes the minimization of postal sector end-to-end costs between Postal Service and upstream competitive providers.

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[5] *See, e.g.*, Cohen et. al. (2002; 2006): Cohen, R. H., W. W. Ferguson, J. D. Waller and S. S. Xenakis, "Impacts of Using Worksharing to Liberalise a Postal Market." In *Liberalisation of Postal Markets*, edited by Gabrielle Kulenkampff and Hilke Smit. Bad Honnef: WIK (2002); Cohen, Robert H., Matthew H. Robinson, John D. Waller, and Spyros S. Xenakis, "Worksharing: How Much Productive Efficiency, at What Cost and at What Price?" In *Progress toward Liberalization of the Postal and Delivery Sector*, edited by Michael A. Crew and Paul R. Kleindorfer. New York: Springer, (2006).
[6] *See* PRC Dkt. No. R2006-1 Op, para. 4004-05.

A. The Simple Economics of Worksharing based on Efficient Component Pricing (ECP) Principles

A simple model suffices to illustrate the efficiency properties of an ECP policy for worksharing. Consider an incumbent that provides two market dominant services: an end-to-end service and a workshared (or "access") service. In the case of the workshared service, competitive consolidators provide upstream, sorting functions and the incumbent provides only delivery. The supply of worksharing activity from competitive consolidators depends upon the size of the spread between the price of the end-to-end service and the workshared service: the worksharing discount. As is typically the case in competitive sectors, the larger the discount, the greater the amount of worksharing services supplied by consolidators. Equilibrium in this upstream marketplace for worksharing services determines the competitive mix of end-to-end and workshared volumes.

In competitive equilibrium in the upstream market, the marginal cost of all active consolidators is equated to the market price they face: i.e., the worksharing discount. Thus, when this discount is set equal to the upstream unit costs that the Postal Service *avoids* by worksharing, all upstream marginal costs for the postal sector are equated and upstream sector costs are minimized. The efficiency follows from the well known principle of optimality for industry efficiency: the marginal costs of all active producers must be equated in order for industry costs to be minimized.[7] When the discount is set less than the unit avoided costs of the Postal Service, consolidators provide too little

[7] *See, e.g.*, Baumol, Panzar and Willig, *Contestable Markets and the Theory of Industry Structure*, Harcourt, San Diego. (Baumol, et. al. 1982), Proposition 11.B5, at p. 317.

worksharing because the marginal cost of the unit they provide is less than the Postal Service costs that would be saved by a marginal increase in workshared volumes. Firms whose unit costs of providing the upstream service component are less than that of the Postal Service are excluded from the market. Conversely, if the discount is set greater than the per unit avoided cost of the Postal Service, the fringe provides too much worksharing: i.e., units of upstream service that are more costly than those of the Postal Service are drawn into the market.

Deviating from ECP reduces productive efficiency and raises serious competition policy concerns. Reducing discounts below Postal Service avoided costs for any reason is a form of exclusionary pricing. Such pricing behavior amounts to a "vertical price squeeze"[8] that would have the effect of excluding from the market more efficient upstream service providers. This would have a short-term negative effect on the productive efficiency of the postal sector and a longer-term negative effect of slowing or reversing the shift in value added from the Postal Service to the private sector.

Briefly, suppose the end-to-end stamp price is 50 cents and the price of the workshared product is 40 cents, so that the worksharing discount is 10 cents. This would give all those firms who could perform the required worksharing at a cost of 10 cents or less the ability to participate profitably in the market. Now suppose that the cost avoided by the Postal Service from worksharing is 12 cents. All those firms whose worksharing

[8] *See, e.g.*, Tirole, *The Theory of Industrial Organization*, MIT Press, 1989 at p. 141.

costs were between 10 and 12 cents would be *excluded* from the market even though they could perform the worksharing activity more efficiently than the Postal Service.[9]

B. Development of Work-sharing Discounts and ECP under the Postal Reform Act of 1970 ("PRA")

This section presents a brief discussion of the evolution of worksharing in the U. S. postal sector under the PRA.[10] Even before the introduction of worksharing discounts, some mail was easier for the Postal Service to process than others. For example, some large mailers routinely submitted mail already partially sorted and placed in trays. Since such mail was cheaper for the Postal Service to process, basic price theory suggests that it might make sense to charge lower rates to such "clean" mailers. It was also clear that "mail cleanliness" was an endogenous characteristic. That is, producing clean mail is something that is costly to most mailers and, therefore, offering a discount for such pre-processing could induce more mailers to take the trouble to do so.

Thus, early on, it was recognized that *incentives* must play a key role in setting any discounts for presenting work-shared mail. The extent to which a firm's mail volumes exhibited desirable, cost-reducing characteristics was not an immutable characteristic of the firm's business, but rather an important operational decision of the firm. The larger the size of the discount, the more mail participating firms were willing to "work" for the Postal Service and the greater the number of firms that were willing to participate in the work-sharing process. The obvious policy question in this context is

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[9] For extended explanations of why worksharing discounts below avoided cost are anticompetitive, see Panzar (2007), (2008), (2010) and (2012).

[10] *See* Coleman W. Hoyt and Robert H. Cohen, *Postal Worksharing: An Irreverent History,* privately published, (2011) for an entertaining history of the origins of postal worksharing.

how should the size of the discount be determined. Almost as soon as this question arose, a compelling and intuitive "solution" emerged: discounts should be approximately equal to the per unit costs avoided by the Postal Service. This policy emerged many years before the issue of access pricing even arose in other network industries such as telecommunications. The avoided cost discount approach was put into practice by the Postal Rate Commission before it had even been given a name by regulatory economists![11]

However, the introduction of worksharing discounts did more than incentivize large mailers to submit "cleaner mail." It created an industry. Consolidators arose to aggregate the volumes of smaller mailers and perform the worksharing services required to obtain discounts. Even more so than large mailers engaged in "in house" preprocessing, such consolidators were both partners with and competitors of the Postal Service. Yet, despite initial resistance from the Postal Service and, especially, postal unions, the PRC fostered the development of this "worksharing market." Over the years, it did so through a clear statement of its objective – minimizing total *postal sector* mail processing costs – and consistent advocacy of the policy required to achieve it — avoided cost worksharing discounts.

[11] Hoyt and Cohen (2011), p. 24: "Many years later we learned about the economic theory called 'Efficient Component Pricing' (ECP). ECP meant that worksharing discounts should be set at cost avoided. We were very glad to learn that there was an actual economic theory that described what we had done based upon intuition."

C. Undesirable and Unnecessary Departures from ECP under PAEA

What happened to shake the "ECP consensus" for cost-based worksharing discounts developed under the PRA? The PAEA explicitly incorporated only a partial solution. The PAEA explicitly prohibited worksharing discounts in excess of avoided costs but left it to the PRC to establish any restrictions on discounts less than avoided costs.[12] Regrettably, the Commission chose *not* to mandate the use of ECP, despite the fact that its responsibility to create a "modern rate system" to implement PAEA gave it the authority to do so.[13] In my view, given modern regulatory economics and practices in other regulated industries in the U.S., a floor on worksharing discounts of 100 percent of avoided cost must be part of any "modern rate making system" for the postal sector because it necessary to promote efficiency and to ensure fair competition in upstream markets.[14]

The Commission implemented the price cap regime required by the PAEA, but that alone is insufficient because the price cap treats market dominant products symmetrically, regardless of whether or not they were workshared. Using economic terminology, the Commission implemented a Global Price Cap regime[15] to regulate the

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[12] "The Commission finds that of these two aspects of the ECP rule, only the former is reflected in section 3622(e). While the Commission considers ECP an economically beneficial pricing practice, Congress acted to prevent workshare discounts that are too large, but did not include language specifically to prevent discounts that do not pass through the full measure of costs avoided." PRC Order 536, pp. 37-38.
[13] *See* 39 U.S.C. 3622(a); 39 U.S.C. 3622(d)(3).
[14] Panzar (2007), (2012).
[15] The term Global Price Caps refers to a system of price cap regulation in which access prices (the prices of workshared products) and retail prices are treated symmetrically in the price cap formula. This theoretical approach was introduced (in the telecommunications context) by Jean-Jacques Laffont and Jean Tirole: "Access Pricing and Competition," *European Economic Review*, 38, pp. 1673-1710 (1994). That is, the regime is one of "global" price cap regulation. Ingo Vogelsang (2003) provides a detailed discussion of

market dominant products of the Postal Service. The pricing freedom introduced under the Global Price Cap regime following PAEA enabled the Postal Service to reduce worksharing discounts below avoided cost if it desired to do so for whatever reason.

As I have emphasized repeatedly recently,[16] incentives may be quite different for a firm subject to PAEA price cap regulation than for one operating under the cost of service regulation as practiced under the PRA. Let me try to make this issue concrete. In an attempt to increase pricing flexibility on the part of the Postal Service, the PAEA mandated that the Commission implement a price cap regime to control the prices of the Postal Service's market dominant services. As noted above, the Commission instituted a Global Price Cap regime in which the prices of workshared and non-workshared products in First-Class Mail are treated symmetrically under the cap. Revisiting the simple example above (see sub-Section IIB) can be used to illustrate the possible "exclusionary" effects of this regulatory policy change.

As above, the Postal Service provides two market dominant services: an end-to-end service and a workshared (or "access") service. In the case of the workshared service, competitive consolidators provide upstream, sorting functions and the incumbent provides only delivery. Assume that, initially, the incumbent was regulated to break-even by cost of service regulation and the worksharing discount was set equal to the

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the use of global price caps to set access prices in "Price Regulation of Access to Telecommunications Networks." *Journal of Economic Literature*, Vol. XLI (Sept. 2003), at 830-862.

[16] *See* John C. Panzar: "Interactions between Regulatory and Antitrust Policy in a Liberalized Postal Sector," In: Crew, Kleindorfer and Campbell (ed.) *Handbook of Worldwide Postal Reform*, Edward Elgar, (2008); "Postal Service Pricing Policies after PAEA," USPS OIG RARC-WP-10-002 (2010); "Postal Service Pricing Policies after the Transition to Price Cap Regulation," *Review of Network Economics*, Vol. 10, Issue 3, (2011).

upstream unit costs of the incumbent; i.e., according to the ECP. Now, suppose a price cap regime is introduced to control the prices of the incumbent and that, as is common, the price weights are set equal to the actual market quantities in the previous period. This condition requires that, *when evaluated at last period's volumes*, the stamp price and discount chosen by the incumbent cannot be expected to yield more than last period's revenues increased by the percentage change in the CPI index of the price cap.[17] When the constraint is binding, the price cap constraint allows the incumbent to increase its stamp price *only if* it also increases its worksharing discount. In this situation, it is possible, but not certain,[18] that the Postal Service would have a profit incentive to *reduce* the worksharing discount below its initial ECP level.

The Commission has not explained why it chose to abandon ECP and adopt a Global Price Cap regime to implement PAEA. Global Price Caps do not enjoy widespread application in telecommunications.[19] However, they have been studied extensively in the postal literature.[20] Despite some potential theoretical advantages, Global Price Caps do not automatically prevent the dominant firm from engaging in

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[17] This is the basic *Laspeyres price cap index formula* most commonly used in the practice of price cap regulation. The need for some index formula arises whenever price cap regulation is applied to a group (or *basket*) of products. Here, and elsewhere in this paper, I am holding all other prices of the Postal Service constant. This allows me to express the price cap constraint only as a function of the variables of interest. Obviously, *all* the rates of interest can be increased under a price cap as long as the impact is offset by decreases in other rates. However, under the assumption that other rates are held constant, the relevant constraint facing the Postal Service is the simple one used here.

[18] Indeed, if the elasticity of the more workshared product is higher than that of the less workshared product, the opposite could be true.

[19] "Global price caps have so far been too bold for any regulator to implement." Vogelsang (2003), p. 843.

[20] For theoretical analyses of global price cap regulation in the postal sector, see Billette de Villemeur, Etienne, Cremer, Helmuth, Roy, Bernard and Toledano, Joëlle, "Optimal Pricing and Price-Cap Regulation in the Postal Sector," *Journal of Regulatory Economic*s, Vol. 24, No. 1 (2003) and De Donder, Phillippe, Helmuth Cremer, Paul Dudley, and Frank Rodriguez "Pricing and Welfare Implications of Alternative Approaches to Setting Price Controls in the Postal Sector," In *Progress toward Liberalization of the Postal and Delivery Sector*, New York: Springer (2006).

exclusionary pricing. Thus, Laffont and Tirole, the "inventors" of Global Price Caps advocate the inclusion of additional safeguards.

> In addition, they [Laffont and Tirole] want to reduce any incentives for anticompetitive behavior by imposing an imputation rule for access pricing in addition to the price caps. Thus, any individual access charges would have to obey both the price cap and the imputation rules.[21]

An imputation rule is a constraint designed by the regulator to prevent exclusion through a vertical price squeeze. In telecommunications, it is a requirement that the wholesale price the dominant firm charges to reselling competitors is no larger than its own retail price *minus* its upstream unit costs. Thus, the standard imputation condition is often referred to as "retail minus." In the worksharing context, this translates directly to the requirement that worksharing discounts must be *no less* than avoided costs.

For whatever reason, the Postal Service has set workshare discounts below 100 percent of avoided costs. As explained above, this undermines the overall productive efficiency of the postal sector. Also, such anticompetitive behavior has the effect of excluding more efficient mailers or mail service providers from mail processing. This proceeding provides the Commission with the opportunity (and responsibility) to prevent these outcomes from occurring in the future.

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[21] *See* Vogelsang (2003) at 843.

III. ECP IS NOT LIKELY TO SERIOUSLY IMPEDE THE PURSUIT OF OTHER COMMISSION PAEA OBJECTIVES

By definition and as with any other constraint, mandating the use of ECP to determine worksharing discounts will reduce the pricing flexibility available to the Postal Service, as compared to the current PAEA price cap mechanism. The Postal Service would no longer have the unfettered flexibility to reduce its worksharing discounts below 100 percent of avoided cost. However, as noted above, both PAEA and the Commission's rulings clearly indicate that pricing flexibility must be balanced with the competing efficiency goals:

> As for worksharing, the Commission recognizes that establishing a "soft floor" (a lower limit subject to certain exceptions) on worksharing discounts may eliminate inefficiencies caused by the Postal Service performing work that mailers may perform at a lower cost. . . . , the Commission notes that the Postal Service's concerns about pricing flexibility may be balanced with the goal of increased efficiency by allowing limited statutory exceptions to the soft floor requirement.[22]

Clearly, ECP does not limit the Postal Service's ability to use pricing to promote efficiency. Indeed, as discussed above, ECP is *the* pricing policy that ensures that worksharing takes place to the extent necessary to maximize postal sector productive efficiency.

ECP does not meaningfully limit pricing flexibility to increase mail volume because it generally only restricts price differences between workshare variants of the same product. In order to increase volume subject to inflation-linked price cap

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[22] Section 701 Report Analysis of Postal Accountability and Enhancement Act of 2006 (Section 701 Report)(Nov. 14, 2016) at 11.

regulation, one would generally apply above-inflation price increases to products with low own price elasticities and below-inflation price increases to products with high own price elasticities. In general, price elasticities vary much more between products than between workshare variants of the same product.[23] An ECP rule would not apply to price differences (i.e., cross-product differences) that would affect volume. Because workshare variants of the same product are expected to have similar own-price elasticities (and the Postal Service estimates volumes on this basis), the size of the discount would have little effect on volume.

For example, holding average price constant, increasing a workshare discount would result in a higher price for the less-workshared variant and a lower price for the more-workshared variant. With similar elasticities, the volume effects of the two price changes would largely offset. In fact, ECP will likely spur volume by minimizing end-to-end costs by ensuring that the most efficient provider performs upstream work.

IV. THE POSTAL REGULATORY COMMISSION SHOULD ONLY ALLOW VERY LIMITED EXCEPTIONS TO AN ECP-BASED FLOOR ON DISCOUNTS.

As explained above, as a matter of economic theory, there is no doubt that workshare discounts less than avoided costs are *exclusionary*. Because they are a means which allow a dominant firm to *exclude* equal or more efficient competitors, in most industries a vertical price squeeze would be deemed a violation of the antitrust laws.

[23] *See* Market Dominant Demand Analysis, FY 2016 (Filed January 23, 2017), VF-Jan2017(md).xlsx, "Elasts." For example, the elasticities used for all First-Class Mail Automation Letters are the same, but they differ from those used for First-Class Mail Automation Flats.

However, because PAEA continues the Postal Service's exemption from the antitrust statutes for its market dominant products,[24] the Commission has the responsibility to ensure that the Postal Service does not abuse its monopoly status while seeking to balance competing statutory objectives under PAEA. A Commission rule that required the Postal Service to set workshare discounts equal to, or as close as practicable to, 100 percent of the avoided costs would balance the competing interests of pricing flexibility and efficiency. A proper balance recognizes that the Commission has the responsibility to take an active role to ensure fair competition in the upstream segments of market dominant products.

The Commission could fashion a rule that required the Postal Service to set workshare prices equal to avoided costs without unduly burdening the ability of the Postal Service to price in a manner that encourages mail volume and efficiency. As noted above, because the rule would only affect workshare rates, it would not impair the Postal Service's pricing flexibility with respect to the many other types of shape-based, non-workshare, and most cross-product rate differentials. And, even with respect to workshare products, the restoration of ECP could be pursued by imposing a regulatory requirement that implemented a "soft avoided cost floor", similar to the current PAEA avoided cost ceiling. Such a rule could also be structured to allow the Postal Service to phase in the adjustments over time, if that is necessary to avoid rate shock.

[24] *See* 39 U.S.C. 409(e).

Thus, a "soft floor" implementation of ECP may prove attractive to the Commission. However, because of the presumptive efficiency properties of avoided cost workshared discounts,[25] the burden would be on the Postal Service to provide a robust quantitative justification for any below floor discounts. For example, in general, workshare prices that comply with ECP will improve efficiency, but an exception similar to the statutory exception under section 3622(e)(2)(D) could be included for circumstances in which departures from ECP prices were shown to enhance efficiency. Similarly, there could be an exception to the presumptive floor based on a showing that ECP pricing would hurt mail volume; for example a quantitative showing based upon analysis of price elasticity or similar data. The exercise of these exceptions would likely be uncommon, but a provision for such exceptions would serve as an appropriate recognition of the competing statutory objective of efficiency and mail volume growth. [26]

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[25] "The Commission notes that passthroughs below 100 percent send inefficient price signals to mailers. Therefore, it encourages the Postal Service to adjust discounts to bring passthroughs closer to 100 percent." Docket No. ACR2014, Annual Compliance Determination (Mar. 27, 2015) at 70, 76-77.

[26] Imposing such a rule would not be a significant departure from current practice. The Commission's existing workshare rules require the Postal Service to justify workshare discounts set "substantially below" avoided costs. *See* 39 C.F.R. § 3010.14(b)(6). That rule is legally binding on the Postal Service but it has not been effectively enforced; the Postal Service offers only perfunctory justifications and the Commission has never required corrective action. The existence of the rule demonstrates that Commission was aware in 2007 that passthroughs below 100 percent are a problem; but more is required given the Postal Service's persistent practice of setting workshare discounts below avoided costs.

V. CONCLUSIONS

For all of the reasons stated above, the Commission should revert to its pioneering regulatory history and practice and reassert its historic commitment to ECP. That is, it should require worksharing discounts to be set equal to avoided costs wherever possible, with deviations permitted only with specified justifications consistent with the objectives and factors of the PAEA.

Respectfully submitted:

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